

Stage 03: Attachment A: Detailed Assessment for P253

P253: Improving the accuracy of the Credit calculation

What stage is this document in the process?

01 Initial Written Assessment

02 Definition Procedure

03 Assessment Procedure

04 Report Phase

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About this document:

This is Attachment A to the Assessment Report. This attachment provides additional detail, including details of the Modification Group's discussions.

1 SAA II Run Calculations

The SAA does not use metered volumes from the SVAA in the II Settlement Run. Instead, the SAA estimates SVAA volumes using data from previous Settlement Days and Settlement Periods. The previous Settlement Day is known as d' and the previous Settlement Period is j' .

To estimate SVA data, SAA does the following:

1. For a given Settlement Day d , previous Settlement Day d' shall be the most recent Settlement Day prior to d that is:
 - 1.1.1. The same day of the week as Settlement Day d ;
 - 1.1.2. Not a clock change day; and
 - 1.1.3. A day on which an Initial Settlement (SF) Run has taken place
2. If Settlement Day d is not a clock change day, then previous Settlement Period $j' =$ Settlement Period j
3. If day d is a short clock change day, then:
 - 3.1. If $j \leq 2$ then $j' = j$
 - 3.2. If $j > 2$ then $j' = j + 2$
4. If day d is a long clock change day, then:
 - 4.1. If $j \leq 4$ then $j' = j$
 - 4.2. If $j > 4$ then $j' = j - 2$
5. Having determined the variables j' and d' , the BM Unit Metered Volume for Supplier BM Units in the Interim Initial Run is calculated as:
 $QM_{ij} = GSPGT_{ij} * QM_{ij'} / GSPGT_{ij'}$

Where:

$GSPGT_{ij}$ is the GSP Group Take for the GSP Group associated with BM Unit i in Settlement Period j on Settlement Day d

$QM_{ij'}$ is the BM Unit Metered Volume for BM Unit i in Settlement Period j' on Settlement Day d'

$GSPGT_{ij'}$ is the GSP Group Take for the GSP Group associated with BM Unit i in Settlement Period j' on Settlement Day d'

If there is no BM Unit Metered Volume for BM Unit i in Settlement Period j' on Settlement Day d' (for example, because the BM Unit was not effective on that Day), then QM_{ij} shall be set to 0.



Any questions?

Contact:

Andrew Wright



andrew.wright@elexon.co.uk



020 7380 4217

2 Group Terms of Reference, Timetable and Membership

Terms of Reference

Proposed Terms of Reference

The Modification Group was formed from members of the SSMG. The Group considered the following items:

The effect of the Modification on Applicable BSC Objectives (c) and (d) and any other relevant BSC Objective(s).

Are new performance levels for 100kW data needed?

How else could the credit calculation be made more accurate?

Will Parties want reports on the SVAA II VAR.

Whether an Alternative Modification is required.

The most effective implementation approach for the Modification, including whether the necessary Code Subsidiary Document changes are drafted in the Assessment Procedure or during implementation.

Timetable

Assessment activity	Date
Modification Group meeting 1	29 March 2010
Draft Requirements Specification	30 March to 08 April 2010
Industry Impact Assessment	09 April 2010 to 07 May 2010
Modification Group meeting 2	12 May 2010
Conduct analysis	13 May 2010 to 01 July 2010
Modification Group meeting 3	02 July 2010
Conduct further analysis	03 July 2010 to 26 July 2010
Modification Group meeting 4	27 July 2010
Draft consultation document	28 July to 05 August 2010
Assessment Procedure Consultation	06 to 20 August 2010
Modification Group meeting 5	24 August 2010
Draft Assessment Report	25 August 2010 to 02 September 2010
Submit Assessment Report to Panel	03 September 2010
Present Assessment Report to Panel	09 September 2010

Attendance List

Member	Organisation	29/03/10	19/05/10	02/07/10	27/07/10	24/08/10
Adam Lattimore	ELEXON (Chairman)	✓	✓	✓	✓	✓
Andrew Wright	ELEXON (lead Analyst)	✓	✓	✓	✓	✓
Chris Stewart	Centrica	✓	✓	X	✓	✓
Gary Henderson	SAIC	✓	✓	✓	✓	✓
Marc Bradbrook	Haven Power	✓	✓	X	X	X
Chris Stribling	Ecotricity	✓	X	X	✓	X
Colette Baldwin	E.ON UK	✓	X	X	X	X
Andy Colley	Scottish and Southern	X	✓	✓	✓	✓
Martin Mate	EDF Energy	✓	X	X	X	✓
Imtiaaz Sali	EnDCo	✓	X	✓	X	X
Jenny Higgins	npower	✓	X	X	✓	✓
Attendee	Organisation					
David Ahmad	ELEXON (Lawyer)	✓	X	X	X	✓
John Lucas	ELEXON (Design Authority)	✓	✓	X	X	✓
Raihana Braimah	Ofgem	✓	X	X	X	X
Tabish Khan	Ofgem	X	✓	✓	X	✓
Fiona Upton	npower	✓	X	X	X	X
Sarah Scott	npower	X	✓	X	X	X
Roz Hartley	ELEXON	X	X	✓	✓	X

3 Modification Group's Discussions

The Modification Group discussions are highlighted below. In each case the Group's initial discussions, views on the impact assessment and analysis where relevant, and final conclusions are grouped together. If you would like a summary of the analysis see Section 4, or for the full analysis, see Attachment B.

The Credit Calculation Issues

The Group noted there were three key issues with the current credit calculation that P253 was looking to address:

1. There can be inaccuracies in the forecasting of SVA data (particularly embedded intermittent generation);
2. The estimation technique does not correctly forecast the usage around a Bank Holiday; and
3. With an increase in embedded generation in some Grid Supply Point (GSP) Groups, the GSP Group Takes (GSPGTs) have been decreasing. As SVA II volumes are based on a percentage of GSPGT, this can make a large difference to SVA volumes.

Inaccuracies of estimating SVA data caused by embedded generation

ELEXON reminded the Group that analysis conducted by the Standing Issue 38 Group had demonstrated that there was a link between the levels of embedded generation in GSP Groups and the level of errors in the Interim Information Run (and therefore the credit calculation). ELEXON noted that they could improve on the analysis by splitting out the Half Hourly (HH) Import, HH Export and Non Half Hourly (NHH) components. This would hopefully prove that it was the Half Hourly Export which was causing the majority of the errors. You can find this analysis on pages 42 to 45 of Attachment B.

The Group also noted that it was likely that the only way to fix the problem of unpredictable embedded generation impacting the accuracy of the credit calculation was using actual metered volumes. This is further explored in the potential alternatives section.

Analysis results

With regards to a link between the level of embedded generation and the level of credit calculation error, the analysis shows:

- The greater the level of embedded generation, the greater the level of error at II;
- The changes in HH Export are more random and the HH Import or NHH components; and
- It is not possible to see a trend in embedded generation across different GSP Groups.

Group's conclusions

The Group concluded that there was a clear link between the level of embedded generation in a GSP Group and the level of credit calculation error. The analysis on pages 46 and 47 of Attachment B also demonstrates that central systems alternatives do not offer an enduring solution to remove embedded generation error from the credit calculation. However, the Proposed Modification would offer a solution.

Bank Holiday issues

One member noted that the current credit calculation causes problems around Bank Holidays. The problem is caused by the significant difference in usage on a Bank Holiday when compared to the same day of the week which is not a Bank Holiday. For Suppliers with large portfolios of business customers this is particularly noticeable.

Another member agreed that some Parties had raised material doubt to correct inaccuracy in the credit calculation around Bank Holidays.

The Group requested ELEXON carry out analysis around the Bank Holidays in order to examine the impact on the accuracy of the credit calculation. The Group also requested ELEXON investigate whether the impact is the same for Scottish Bank Holidays.

Analysis results

The credit calculation is clearly affected on Bank Holiday Settlement Dates and also Settlement Dates 21 days after the bank holiday, i.e. when the bank holiday becomes the reference day.

Group's conclusions

The Group noted the analysis clearly shows the error in the credit calculation increases around Bank Holidays and where Bank Holidays are used as reference days. On that basis the Group developed an alternative which would alleviate the Bank Holiday problem. See the Potential Alternatives section below for more details.

GSP Group Take tending towards zero

The current credit calculation is susceptible to significant problems where the GSP Group Take approaches zero. This is becoming a particular problem in those GSP Groups with significant embedded generation. Where GSP Group Take for the reference day approaches zero for a Settlement Day where GSP Group take was significantly more than zero, the current calculation causes the Supplier BM Unit Metered Volume may tend towards infinity. This then leads to Suppliers raising material doubt claims as the Supplier BM Unit Metered Volume is clearly incorrect.

ELEXON noted that the Standing Issue 38 Group had demonstrated this problem with a worked example. This example could be repeated. The Group agreed this would be useful.

One member commented that the problem will only get worse. As more embedded generation is built GSP Group Takes are more and more likely to approach zero. Currently it was the North of Scotland which was particularly problematic. However, there were signs that other GSP Groups were starting to approach zero.

Analysis results

The analysis shows that the credit calculation is increasingly inaccurate as the GSP Group Take approaches zero. For more details see pages 39 to 41 of Attachment B.

Group's conclusions

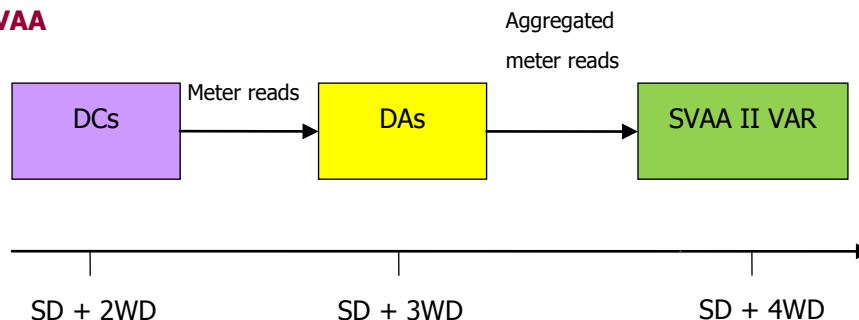
The Group agreed with analysis conclusions above. ELEXON suggested that it may be possible to develop an alternative which would only impact the BSC Systems and would fix this problem. This potential alternative had been discussed during the Standing Issue 38 Group. The Group requested ELEXON develop this potential alternative. See the Potential Alternatives section below for more details.

Would DC/DAs be able to meet the new timescales, how much actual metered volumes would be received and should providing the SVA HH metered volumes be incentivised?

The Group noted that one of the key questions was could the Supplier Agents meet the Proposed Modification timetables. Currently, Data Aggregators must submit aggregated metered data to SVAA within 14 Working Days of the Settlement Date. The Proposed Modification would reduce that timescale considerably.

The Group first considered what timescales would be required for the Proposed Modification. The considered that the following timescales would be appropriate:

Figure 1: Timetable for Agents to provide aggregated metered volumes to the SVAA



On that basis some members were concerned that it may not be possible for all Agents to achieve these proposed timescales. However, other members considered that it should be possible for DCs and DAs to send the necessary data to the SVAA within the new timescales. The Group agreed to ask whether such timescales were achievable as part of the Impact Assessment.

The Group then considered what percentage of metered volumes they would hope for from HHDCs. One member suggested asking HHDCs what percentage of metered volumes they could provide. Another member commented that providing a suggested target might draw out a more complete response. The Group agreed to ask Impact Assessment respondents whether they could provide 90% or 95% of metered volumes. The Group also asked that if respondents could not provide at least 90%, what percentage could they provide.

One member commented that under P253 it was likely that some of the HH Metered Volumes would be estimated. They believed it was important to ask Party Agents what estimation techniques they used. It was noted that BSCP502 section 4.2.1 contains the estimation techniques. Techniques 'a' to 'f' are the preferred ones. It would be useful to ask Party Agents whether they used the preferred estimation techniques.

Alongside these discussions the Group considered whether the Proposed Modification should include incentives on Suppliers to ensure their Party Agents provide a certain percentage of HH metered volumes. The Group had no firm opinion at this point and decided to revisit the debate following the Industry Impact Assessment, when they would have a better idea about whether HHDCs could provide 90% or more metered volumes.

Industry Impact Assessment

Can you provide 90% actual HH data with the Proposed Modification timescales?

- Yes – 5

- No – 1

Can you provide 95% actual HH data with the Proposed Modification timescales?

- Yes – 2
- No – 4

Respondents also noted potential problems with:

- Hand held reads
- De-energised sites
- Sites with meters removed

Where Half-hourly meter reads cannot be obtained within the proposed timescales, will Data Collectors be able to provide estimations using method 'f' or higher (as detailed in BSCP502 section 4.2.1)?

All HHDC responses noted that they would be able to estimate in accordance with BSCP502.

One respondent noted there would be a cost impact, less qualitative estimates, more Supplier queries and an increase in exceptions.

One respondent noted that for CoS sites it would only be possible if CoS did not include change of HHDC.

Further Group discussion

The Group noted one respondent had identified problems with hand held HH meter readings. These are Half Hourly metered sites which are not read remotely, but permanently ready by hand. If there were large numbers of hand read sites there would need to be a greater amount of estimated volumes. The Group requested ELEXON find out what percentage of the HH market is read by hand.

The Group noted that some respondents seemed concerned that P253 would place targets on DCs/DAs to provide either 90% or 95% of HH data. The Group emphasized that the figures of 90% or 95% were there to help the Group understand what percentage of actual could be provided. The solution did not currently include incentives.

The Group debated whether incentives would be useful. On the one hand, the more actual metered volumes, the more accurate the P253 solution would become. On the other hand, placing incentives on Suppliers could increase expense for little benefit. The Group also noted that although the II Run was used for the Credit Calculation, it was not a Settlement Run. On the basis the Group agreed that the Proposed Modification would not include Supplier incentives.

Finally, the Group noted that ELEXON were proposing to use SF data to analyse the effectiveness of the Proposed Modification solution (see Attachment B). The Group commented that the Supplier metered data collected in time for the II run was likely to be less accurate as SF run data, as more of it will be estimated. The Group requested ELEXON conduct a sensitivity analysis in order to determine how inaccurate this metered data could be before it was more inaccurate than the current II Run.

Analysis results

ELEXON's analysis of Half Hourly hand read sites is on page 39 of Attachment B. On average, **1.05%** of SVA Half Hourly Meters are permanently hand read.

ELEXON's sensitivity analysis shows that for small Suppliers with embedded generation, latest run type data adjusted by as much as 5% to 10% is closer to actual metered volumes than II run data. For larger Suppliers the percentage adjustment is somewhat lower at less than 5%, although this may represent a much larger value in financial terms. ELEXON noted that these percentages are very high as one would expect error to average out (i.e. some over-estimates, some under-estimates).

Group's conclusions

The Group concluded the following:

- The majority of Party Agents would be able to provide an acceptable percentage of Metered Volumes within the P253 timescales;
- Even if the metered volumes are several percent incorrect through estimate data, the Proposed Modification is still more accurate than the current Supplier BM Unit estimation method;
- Hand read meters were not a significant issue when considering whether Party Agents could provide an acceptable percentage of Metered Volumes within the P253 timescales; and
- No Supplier incentives should be set under P253.

Should the new timescales be mandated in a BSCP or not?

Group's initial discussions

The Group considered whether the new Proposed Modification timescales should be mandated in a BSCP. Either all the new timescales could be documented in a BSCP. Or only the timescale for the Data Aggregator sending aggregated data on Settlement Day + 4 would be documented. This would leave the other timescales to the discretion of Parties and Party Agents. The Group's initial view was that it would be better for certainty to include all timescales in the BSCP. This would reduce confusion. The Group agreed to ask a question as part of the Impact Assessment.

Industry Impact Assessment

Should the new DA/DC timescales be in a BSCP or be contractual?

Respondents' preference:

- BSCP – 3
- Contractual – 2
- Don't want change – 2
- No comment/not applicable/no opinion – 5

Group's conclusions

The Group noted that the respondent's views did not provide a firm steer as to whether it was better to include the new timescales in the relevant BSCP or not. The Group agreed that the timescales should be documented in the relevant BSCP.

Will Parties want reports on the SVAA II VAR?

The Group discussed whether Parties would find it useful to receive SVAA II Volume Allocation Run Reports. ELEXON commented that their assumption was that these reports would not be wanted. One member commented that he did not think the data would be useful, but that did not mean it had no use. ELEXON noted that Parties would see the overall figures in the SAA-I014 'Settlement Report' flow. The Group agreed that, as they could not see a firm reason why the data would be useful to Parties, the sending of SVAA II VAR Reports to Parties should not be included in the Proposed Modification.

Would the Proposed Modification have an impact on the Change Supplier process?

Group's initial discussions

One member voiced concerns that introducing P253 would have a detrimental impact on the change of Supplier/Agent process. They noted that the current change of Supplier process works in a world where Data Aggregators are not required to provide aggregated data to SVAA until 14 Working Days after the Settlement. This would be reduced to 3 Working Days.

Another member noted that the biggest impact was likely to be around the contract change periods – April and October – where HH contracts are renewed. One member noted that a Party could raise a material doubt claim if they were concerned about the credit calculation during the contract round. ELEXON noted that few past material doubt claims had related to the contract round.

Industry Impact Assessment

How would P253 impact change of Supplier/Agent process?

There was a mixed response to the question. Respondents noted:

- No impact
- They would be able to complete CoS processes within proposed timescales
- P253 should not impact CoS process
- Potential impact relating to registration details or missing MOA details

Group's conclusions

The Group noted that with such a mixed response it was difficult to conclude as to whether the change of Supplier/Agent process would be impacted.

Further discussion on the industry Impact Assessment

Question 1: what are the impacts, costs and implementation timescales of the Proposed Modification on your organisation?

Key themes from the responses

- One respondent commented that the Proposed Modification would improve credit calculation accuracy. This would reduce credit and free up working capital. It would help them understand their imbalance position sooner. And should enable them to reduce their imbalance.
- One respondent commented they would be impacted by the additional aggregation run need and the Proposed Modification would require a 3 months implementation timescale.
- One respondent did not support P253. They believed the NHH changes were unfeasible and that P253 is anti-competitive as they would not be able to offer value added services, and that they would require 12 months to implement the Proposed Modification.
- One respondent commented they would have system impacts and would require 6 months to implement. They also noted that the increase Data Transfer Network traffic would increase their costs by £2,000 per year. They also noted that there would need to be updated MDD flows
- One respondents were concerned that P253 would introduce contractual issues with DAs/DCs and have MDD flow cost implications
- One respondent commented that they would require system changes, changes to accept flows earlier. They believed there would be limited benefit in receiving more accurate II data earlier.
- One respondent commented that they would require 6 to 9 months to implement.

Group views

A Group member questioned why one respondent considered the NHH P253 changes unfeasible. ELEXON explained that they had contacted the respondent who elaborated that they were concerned that the quality of the NHH data would be no better than the current process. The data they would be sending at SD+3 would be almost entirely made up of Estimated Annual Consumptions (EACs), rather than Annualised Advances (AAs). The member believed that even NHH data made entirely of EACs would be better than the current estimated data.

The member also struggled to believe that the P253 changes would take a year to complete. In their view a lot of functionality already existed. They also noted that no costs had been provided.

ELEXON noted that the respondent had commented that they believed P253 was uncompetitive. The respondent had subsequently elaborated that by reducing the mandated timescales for providing metered volumes would remove one of their value added services. Some members disagreed that this would be 'uncompetitive'. P253 would only be uncompetitive if it was discriminatory. The member believed this would not be the case under P253. It may erode some of the value of Supplier receiving data more quickly. However, there would be areas where an Agent could perform above and beyond what was expected under P253. For example, as there are no performance targets under the Proposed Modification and a potential value added service would be to guarantee a certain percentage of Half Hourly Metered Volumes.

Question 11 – Any comments

Key themes from the responses

- One respondent commented that they would require an extensive implementation timescale and therefore P253 would coincide with the smart metering roll out – have the Group considered smart metering conclusions?
- One respondent requested the group provide guidance on whether HH exception Reports (D0235s) need to be issued to relevant Parties?
- One respondent wanted to know whether II Run data would need to be sent to Supplier and SVAA, or just SVAA?
- One respondent questioned whether a timetable for II runs would published on ELEXON website?
- One respondent commented that they welcomed the setting of higher standards, provided there is a review on MOA obligations to provide accurate and timely MTDs
- One respondent believe the cost of P253 to Agents would not justify marginal benefit to Suppliers. They believed that the smart metering roll out would have progressed into Settlement by time this Mod was implemented, and that the solution, particularly the NHH element, was not clearly thought through

Group views

The Group noted the question regarding whether the Group had considered the introduction of smart metering for P253. The Group agreed that this would need to be considered once the full costs and benefits had been identified. The Group resolved to reconsider the question of P253's interactions with smart metering once the cost-benefit analysis had been completed.

One respondent had identified that P253 is likely to lead to a great number of D0235 'Half Hourly Aggregation Exception Report' exceptions. The Group agreed that there should be guidance on how to deal with D0235 exceptions that would result from the P253. This guidance should be that HHDA's should have no obligation to manage D0235 exceptions that result from the II aggregation run.

The same respondent also questioned whether II run data would need to be sent to Supplier and SVAA, or just SVAA? As noted above the Group debated the merits of whether Suppliers would want to receive the additional data. The Group finally agreed that Suppliers would not receive the additional data.

ELEXON confirmed a new Settlement calendar would be published on the ELEXON website.

One respondent believed the cost of P253 to Agents does not justify marginal benefit to Suppliers. They also commented that the smart metering roll out would have progressed into Settlement by time P253 would be implemented and the P253 solution was not clearly thought through – NHH component is an afterthought.

The Group commented that no firm costs had been provided and the benefits had not been fully investigated. It was difficult to understand the respondent's view as they had not provided costs or timescales for implementing P253.

How does smart metering relate to P253?

The Group considered how the introduction of smart meters would relate to P253. The Group could see that the introduction of smart meters could make it far easier to gain access to Half Hourly Metered Volumes in reduces timescales. However, as of the last Group meeting on 27 July 2010 the Smart Metering Prospectus had not been issued (it

was issued on the afternoon of the Group meeting). So, without a detailed description of how smart metering would develop in the next few years, the Group could only speculate. Could Group will reconsider the smart metering question at its final meeting.

Are there any alternatives?

The Group investigated several alternatives before settling on an Alternative Modification. In general potential alternatives were looking to provide a central systems solution which would not impact participants.

Initial Group discussions

Moving the II Run to SD+6 or SD+7

One Group member noted that if Party Agents had problems with completing all the P253 activities within the current II timescales then maybe moving the II Run was a possibility. By moving the II run, Party Agents would have more time to complete the Proposed Modification activities. The Group agreed that moving the II Run should be investigated further and asked ELEXON to include a question on the moving the II Run in the Impact Assessment.

The Bank Holiday Solution

The Group then considered if there was a solution to the Bank Holiday problem. The problem was that the current estimation process did not take account of the different energy usage on Bank Holidays. For Bank Holidays the Group proposed that the reference day should be a Sunday. The Group included a question on the Bank Holiday solution in the Impact Assessment.

Impact Assessment

What would be the impact if the Bank Holidays were calculated in a different way?

There were few comments from respondent. Most noted no change of impact. However, one respondent was "totally averse to this suggestion". They believed there would be significant impacts and heightened risk. Another respondent believed the Bank Holiday solution would not fully address the credit calculation issue.

What would the impact be moving the II Run to SD+6 or SD+7?

Respondents were asked whether the answers to earlier questions on the Proposed Modification would change their views if the II Run were moved to SD+6 or SD+7. They responded as:

- No change - 8
- Positive change - 3

Those that noted a positive change changed that moving the II run would allow the 95% target for HH meter readings to be more easily met. It would also place less pressure on the change of Supplier/Agent processes. And improve the accuracy of data.

However, mostly respondents thought the overall benefit would be minimal, it would not improve Settlement and would still require some Party Agent system development.

Potential alternative - using 5 weeks of historic data

One respondent proposed a potential alternative which would build upon the current arrangements. Instead of using the day 3 weeks before the Settlement Day to estimate the energy volume, the solution would use an average of the relevant day 3 to 7 weeks prior to the Settlement Day. This would smooth out the peaks and troughs. The respondent suggested combining this with the Bank Holiday alternative which the Group identified at the first P253 meeting.

Further Group discussions

The Bank Holiday Solution

ELEXON noted to the Group that it had contacted the respondent who noted a significant impact. ELEXON had discussed the response and found that there was a cross of wires:

- The respondent was concerned that the Bank Holiday solution related to the estimation of Metered Volumes for individual MPANs by HHDCs (in accordance with Annex S-2 of the BSC and Annex 4.2 of BSCP502)
- ELEXON clarified that the Bank Holiday solution relates to estimation of Metered Volumes for Supplier BM Units by SAA in the II run (in accordance with Section T4.2.2 of the BSC). This process is internal to central systems and should be completely invisible to HHDCs.

With this clarification the respondent noted that they were no longer impacted and their original response did not apply.

The Group were keen to further explore the Bank Holiday solution. They commissioned three pieces of analysis to investigate the solution.

Moving the II Run to SD+6 or SD+7

The Group noted that the majority of respondents did not believe that moving the II Run to SD+6 or SD+7 would provide much improvement. One member also commented that moving the II Run would increase the number of days for which Credit Assessment Energy Indebtedness (CEI) (see main document, Section 2) was used. This was less accurate than the current calculation method for Actual Energy Indebtedness (AEI) (see main document, Section 2), so should be avoided. On that basis the Group did not further investigate moving the II Run as an alternative solution.

Potential Alternative - using 5 weeks of historic data

The Group believed there could be merit in using an average of 5 weeks of historic data (or more accurately, averaging the Supplier BM Unit Metered Volumes over 5 'like' days in the previous 5 weeks). They requested ELEXON to conduct analysis on how it would impact the credit calculation.

Central systems alternatives

ELEXON noted that there were two other potential central systems alternative that they could analyse:

- The Issue 38 Method – this is a variant of the current method that the Standing Issue 38 Group examined. Rather than applying an adjustment factor to the previous Metered Volumes, the change in GSP Group Take (since the reference Settlement Period) is allocated among BM Units in proportion to the absolute size of their Metered Volume.
- Enhanced Issue 38 Method – this is the potential central systems solution we mentioned at the last meeting, which can be seen as a variant of the Standing Issue 38 method. The change in GSP Group Take is allocated among BM Units in proportion to the total absolute value of their Import and Export (as opposed to the Issue 38 method, which allocates in proportion to the absolute value of the net Metered Volume).

The Group requested ELEXON analyse the effectiveness of these two solutions.

Analysis on the Bank Holiday solution

The analysis of the Bank Holiday solution showed that not only was the credit calculation affected on Bank Holiday Settlement Days, but also Settlement Days 21 days after the Bank Holiday, i.e. when the bank holiday becomes the reference day.

The use of a Sunday as the reference day, rather than a 'like' day did reduce the error in the calculation for the August 2009 bank holiday. For the Christmas period the method was slightly less successful. If this solution were introduced, then an alternative for the Bank Holiday when it becomes the reference day would also need to be considered.

ELEXON also conducted analysis on the Scottish Bank Holidays, to work out whether these should be included in the Bank Holiday solution. However, the results were less conclusive.

The Group noted that the analysis clearly showed that the Bank Holiday solution would need to be updated to be fully effective. The Group agreed to update the solution so that where the Bank Holiday was the reference day, instead of using the Bank Holiday, the BSC Systems would use the previous 'like' day which had passed through SF.

ELEXON updated the analysis and the Group was able to conclude that using the previous like Settlement Day rather than the Bank Holiday as a reference day did reduce the error. This time it was also clear that applying the Bank Holiday solution to Scottish Bank Holidays actually increased the error in the credit calculation. Hence the Group used the analysis to agree the Alternative Modification would include the Bank Holiday Solution for English and Welsh Bank Holidays (i.e. not including the Scottish Bank Holidays).

Central System solutions

ELEXON analysed the central system solutions together. The following table (which can also be found in Attachment B) shows the results of the analysis:

Comparison of Potential Central Systems Alternatives (for Settlement Days in October 2009)					
GSP Group	Current Method	Using Five Weeks of Historic Data (Variant 1)¹	Using Five Weeks of Historic Data (Variant 2)	Issue 38 Method	Enhanced Issue 38 Method
_A	7.96%	8.41%	8.39%	7.75%	7.88%
_B	9.40%	9.32%	9.24%	9.10%	8.79%
_C	3.99%	4.93%	4.92%	3.99%	3.99%
_D	13.78%	12.88%	12.53%	13.42%	12.19%
_E	7.57%	9.19%	9.14%	7.55%	7.52%
_F	12.50%	13.28%	13.30%	12.14%	12.22%
_G	8.36%	8.40%	8.34%	8.30%	8.04%
_H	4.48%	4.55%	4.53%	4.42%	4.39%
_J	9.51%	9.96%	9.91%	9.34%	9.24%
_K	7.70%	7.15%	7.12%	7.65%	7.62%
_L	5.92%	7.23%	7.20%	5.92%	6.03%
_M	7.13%	7.80%	7.79%	7.21%	7.31%
_N	14.34%	15.29%	14.99%	13.95%	13.12%
_P	39.30%	40.79%	32.96%	29.12%	22.84%

The Group was able to conclude that none of the new methods would resolve the underlying problems of estimating embedded generation. However, of the solutions the Enhanced Issue 38 method offered the biggest improvement, particularly in the GSP Group _P, the North of Scotland. And the Enhanced Issue 38 Method would fix the problem where GSP Group Take approaches zero.

Group conclusions on Alternatives

The Group concluded that an Alternative that combined the Bank Holiday Solution (not including Scottish Bank Holidays) with the Enhanced Issue 38 solution should be taken forward as the Alternative Modification. Although neither of these solutions would more accurately forecast embedded generation, they did offer a central systems solution which would fix the other two issues. They should also have minimum impact on participants.

Group's discussion of the consultation responses

Have we overstated the Proposed Modification benefits?

Regarding the Proposed Modification, one respondent commented:

"Part 2 of the benefits analysis assumes that a Party goes into administration at the point of maximum underestimation of credit cover. Therefore, for this to be an actual realised benefit (such that it can be compared to cost of implementation), some element of likelihood of going into administration at this point needs to be applied. This is likely to significantly reduce this benefit from £234,481 to a fraction of it.

¹ See Attachment B, Appendix A for details of the two variants of this technique that we modelled.

Similarly with part 3 of the benefits analysis, there should be an associated risk factor of a Party going into administration applied to the benefit. The chance of a Party going into administration at any point has historically been proven to be low, (although it has occurred) but the likelihood of them going into administration at the point of maximum underestimation is potentially lower again. This is likely to significantly reduce the actual realised benefit from £2,990,091 to a fraction of it.”

The Group discussed whether the Proposed Modification Cost-Benefit Analysis (CBA) overstated the benefits. One member agreed with the respondent’s comment and noted that the CBA was comparing known costs against estimated benefits. Another respondent noted that the assumption that a Party would go into administration at maximum possible exposure was not unusual. Indeed, in their opinion, Parties that are in trouble are more likely to be short than long and hence the assumption was valid.

One respondent commented that Benefits 2 and 3 were related to the improved risk management that one would get under the Proposed Modification. They reminded the Group that Parties spend significant amounts on insurance in general. The Proposed Modification would improve risk management under the BSC which would benefit all Parties. They also noted that Parties may place different values on risk management. And some of that may be due to Parties being exposed to differing amounts if another Party were to default. This is due to the different Funding Shares that Parties have. The larger the Party, the greater their exposure to another Party’s default.

ELEXON suggested that they could add a clarification on the CBA noting that Benefit 2 and 3 were worst case scenarios. The Group agreed with this way forward.

Should the Group conduct analysis on SVA Export sites

One respondent commented:

“...we believe that the analysis to date has omitted a key factor, i.e. performance levels for generation sites. It is reported that the majority of these sites are within specific GSPs however there is no supporting information regarding data completeness in these specific regions and nor have any specific questions been asked of the industry regarding performance on export sites. More importantly there is no reference to, and therefore we believe no consideration of, the BSC requirement which will result in HHDCs submitting zero estimations for all export sites in the absence of actual data which reduces perceived benefits. In order to enable a decision regarding the value of the proposed change, further analysis must be performed in this area in order to determine the actual benefit of the proposed change and subsequently a re-evaluation of the Alternative Proposal.”

The Group agreed that this was an important point to consider. One member commented that there were processes in place for generators to submit data if something had failed. Someone could be sent out to the site to hand read it. And in their experience if something failed then there was a strong incentive to fix things.

Another member noted that although the Group was not proposing performance incentives there were innate business incentives to provide accurate data. Another member expanded on this. They noted that the respondent had correctly identified that if there is an absence of actual data then the HHDC would submit zero estimations. However, for a Supplier with embedded generation a zero estimation at an embedded generator would increase their demand and so increase their Energy Indebtedness. This could potentially require the Supplier to increase their credit cover. This provided an inbuilt incentive to fix metering faults quickly.

The Group considered the respondents suggestion and decided that no further analysis was required.

Data Transfer Network costs

One respondent had noted there would be an increase in Data Transfer Network (DTN) costs from the Proposed Modification. The Group wondered what those costs would be. ELEXON noted that an Impact Assessment respondent had noted an annual increase in DTN costs of approximately £2k.

Move the Release date for the Alternative Modification

One respondent had questioned whether the Alternative Modification could be implemented sooner as there was only 8 months of BSC System development required. ELEXON noted that the earliest Release 8 months after mid-November 2010 was the November 2011 Release. To implement earlier would mean implementing outside of the scheduled Release. On this basis the Group agreed not to change the Implementation Dates.

Industry implementation costs for the Proposed Modification

The Group reviewed the industry implementation costs for the Proposed Modification. They noted that two respondents had provided costs around £100k to £150k. Another respondent had related the Proposed Modification to a recent implementation which required 270 man days. On the basis of these responses and their own research one Group member considered an implementation cost estimate of £500,000 over the whole industry to be a possibility.

The Group noted that a number of them had discussed the implementation costs within their organisations. One member noted that figures of around £20k for the Supplier Agent implementation and £100k for Supplier implementation had been suggested at their organisation.

Another member explained that, based on their discussions within their organisation, a large proportion of the costs arose from reporting.

Members noted that one of the respondents had identified the following impacts on the HH and NHH sides:

“Additional settlement runs reporting to be created for all suppliers for the new run code.”

The Group noted that the solution did not require reports to be sent to Suppliers. The Group requested ELEXON contact the respondent to clarify this point. ELEXON emailed the respondent clarifying the Proposed Modification.

One member was noted that a number of the effort estimates for that response were significantly higher than they might have assumed. They questioned whether the respondent had correctly interpreted the requirements.

Group's discussion of the Cost-Benefit Analysis

P253

The majority of the Group believed the benefits were outweighed the costs for the Proposed Modification. Granted it would be a more expensive solution for the industry, but it was a better solution than the Alternative Modification and an enduring solution.

A minority of the Group believed the costs would outweigh the benefits for the Proposed Modification. They were concerned that the full costs had not been identified. They noted that the Group had made every effort to do so but had been unsuccessful. Although some benefits were assumed these were not overwhelming enough to outweigh the potential costs.

One member noted that comparing the BSC Agent and ELEXON costs with Benefit 1 (see main document) suggested the Proposed Modification could pay back on the central costs within one year. And, based on what some consultation respondents had noted, there might be a full pay back (i.e. the benefits outweighing the costs) within 3 to 5 years. In addition it was important to see the Proposed Modification as providing greater risk protection to Parties. Something they did not believe would be such a strong benefit under the Alternative Modification.

P265

Group members were surprised that the benefits of the Alternative Modification were much less obvious than the Proposed Modification. ELEXON explained that the Alternative Modification was an improved way of estimating metered volumes which was meant to fix the Bank Holiday problem and the GSPGT approaching zero problem. However, analysis had shown that on average the Alternative Modification was roughly as accurate as the current arrangements. It was a patch to fix certain periods but not a cure-all.

One member noted that intuitively they believed that the Alternative Modification would have an overall benefit, although they admitted the benefit was less obvious than they had expected.

Another member noted that the costs of the Alternative Modification were limited to the BSC Systems and ELEXON whereas the Proposed Modification had a greater number of unknown costs. Without an overwhelming benefit they believed that the Alternative Modification was a better option.

One member believed that the benefits of the Alternative Modification would outweigh the costs. However, the benefits of the Proposed Modification were much stronger. The Proposed Modification was intrinsically the better way of calculating Energy Indebtedness. The Proposed Modification would increase confidence in the credit calculation and reduce the risk of unsecured credit. It was less clear the Proposed Modification would do this.

Further comments will be added if Group members have additional views arising from the Alternative Modification CBA.

Analysis undertaken by ELEXON

The Group requested that ELEXON undertake the following analysis:

1. Error in Credit Calculation
2. Sensitivity analysis of error in Credit Calculation
3. Impact of Bank Holidays on the Credit Calculation
4. Scottish Bank Holidays
5. Further analysis on the Bank Holiday solution
6. How quickly are D0268 'Half Hourly Meter Technical Details' flows are sent under the current arrangements?
7. Hand Read Half Hourly Meters
8. What happens when GSP Group take tends to zero?
9. Link between Embedded Generation and Errors in Credit Checking
10. Why Does Estimation Break Down for Embedded Generation?
11. Is Embedded Generation Behaving Consistently Across the Country?
12. Potential Central System Alternatives
13. P253 Modification – Benefit Analysis
14. P265 Modification – Benefit Analysis

The full results of the analysis can be found in Attachment B. Below is the summary of why we did each piece of analysis and what it told us.

Error in Credit Calculation

Why we did it?

To understand the error in the current credit calculation and how it would potentially compare to the Proposed Modification.

Group's conclusions

The Group commented that the analysis proves that the error in the current Credit Calculation is not an immaterial one. Financially, the greatest impact is on the larger Suppliers. The largest percentage impact is on smaller Suppliers with embedded generation. These Parties tend to lodge less credit cover in relative terms and so are more likely to notice the impact on their Credit Cover Percentage.

Sensitivity analysis of error in Credit Calculation

Why we did it?

To understand what would happen if there were errors in the SVA HH metered volumes used under the Proposed Modification. Would the error still be less than using the current estimation method?

Group's conclusions

The Group commented that the sensitivity analysis was conclusive. It was clear that for small Suppliers with embedded generation, latest run type data adjusted by as much as 5% to 10% is closer to actual metered volumes than II run data. For larger Suppliers the percentage adjustment is somewhat lower at less than 5%, although this may represent a much larger value in financial terms.

Impact of Bank Holidays on the Credit Calculation

Why we did it?

To work out whether the error in the credit calculation increased around Bank Holidays.

Group's conclusions

The Group commented that not only is the credit calculation affected on Bank Holiday Settlement Dates, but also Settlement Dates 21 days after the bank holiday, i.e. when the bank holiday becomes the reference day.

The use of a Sunday as the reference day, rather than a 'like' day does reduce the error in the calculation for the August 2009 bank holiday. For the Christmas period the method is slightly less successful. If this solution were introduced, then an alternative for the bank holiday when it becomes the reference day would also need to be considered (see the Further analysis on the Bank Holiday solution).

Scottish Bank Holidays

Why we did it?

To see if we should also include Scottish Bank Holidays in the potential alternative solution?

Group's conclusions

The Group noted the analysis was inconclusive. They therefore commissioned the next set of analysis which was conclusive.

Further analysis on the Bank Holiday solution

Why we did it?

To test an updated solution where Bank Holidays were not used for the reference day, and to decide if Scottish Bank Holidays should be used in the solution.

Group's conclusions

The Group noted that using the previous like Settlement Day rather than the Bank Holiday as a reference day reduce the error. It was also clear that applying the Bank Holiday solution to Scottish Bank Holidays actually increased the error in the credit calculation. Hence the Group used the analysis to agree the Alternative Modification would not include Scottish Bank Holidays.

How quickly are D0268 'Half Hourly Meter Technical Details' flows are sent under the current arrangements?

Why we did it?

To see how quickly D0268 'Half Hourly Meter Technical Details' flows are sent under the current arrangements. I.e. on change of Supplier, how many sites can the Half Hourly Data Collector dial on Day 1?

Group's conclusions

Unfortunately, the data we were looking for in PARMs was not present. Hence ELEXON could not complete the analysis. The Group noted that respondents had provided mixed opinion as to whether the Change of Supplier/Agent processes would be impacted by P253.

Hand Read Half Hourly Meters

Why we did it?

One impact assessment respondent identified that some SVA Half Hourly Meters are permanently hand read. Thus it was extremely difficult for Data Collectors to provide Meter Readings in the Proposed Modification timescales.

What conclusions we made

The percentage of hand read SVA Half Hourly Meters in low (1.05%). The Group concluded that there would be relatively little impact on receiving Half Hourly Meter reads from permanent hand read Meters.

What happens when GSP Group take tends to zero?

Why we did it?

To show an example of what happens when GSP Group Take tends toward zero.

Group's conclusions

The Group concluded that the current credit calculation does not work well when GSP Group Take tends towards zero.

Link between Embedded Generation and Errors in Credit Checking

Why we did it?

To prove the link between the level of embedded generation in GSP Groups and the errors in the credit calculation.

Group's conclusions

The analysis shows there is a clear link between the levels of embedded generation and errors in the credit calculation.

Why Does Estimation Break Down for Embedded Generation?

Why we did it?

We wanted to further investigate what was causing the link between the level of embedded generation in GSP Groups and the errors in the credit calculation. Was it definitely the embedded generation?

Group's conclusions

The analysis clearly proves that it is the HH Expert component that is fluctuating in an unpredictable way. This shows that it is the embedded generation which is causing errors in the credit calculation.

Is Embedded Generation Behaving Consistently Across the Country?

Why we did it?

To determine whether it was possible to see a pattern for embedded generation across the country.

Group's conclusions

The Group concluded that no pattern existed. This analysis further proved that it is very difficult to accurately predict embedded generation.

Potential Central System Alternatives

Why we did it?

To test whether any of the central systems alternatives would improve the credit calculation accuracy. The alternatives we tested were:

- The Current Method – apply an adjustment factor to the Metered Volumes from the reference period so that their total matches the current GSP Group Take
- Using Five Weeks of Historic Data – use data from the five most recent available weeks (rather than just one) in order to smooth out peaks and troughs. This option was suggested at the last Modification Group meeting.
- The Issue 38 Method – this is a variant of the current method that the Issue 38 Group examined. Rather than applying an adjustment factor to the previous Metered Volumes, the change in GSP Group Take (since the reference Settlement Period) is allocated among BM Units in proportion to the absolute size of their Metered Volume.
- Enhanced Issue 38 Method – this is the potential central systems solution we mentioned at the last meeting, which can be seen as a variant of the Issue 38 method. The change in GSP Group Take is allocated among BM Units in proportion to the total absolute value of their Import and Export (as opposed to the Issue 38 method, which allocates in proportion to the absolute value of the net Metered Volume).

Group's conclusions

None of the potential alternatives appear to resolve the underlying accuracy issue. Their accuracy appears to be (at best) only slightly higher than the current method (except possibly in North Scotland, where all of them seem somewhat better than the current method).

Although this is disappointing, it is consistent with the idea that embedded generation is intrinsically hard to predict.

The advantage that the alternative methods of estimation have over the current approach is that they seem to work better in North Scotland i.e. they are more robust to very high levels of embedded generation. The Group therefore agreed it would progress the best of the potential alternative – the Enhanced Issue 38 solution.

Proposed Modification – Benefit Analysis

Why we did it?

In order to understand the cost-benefit of the Proposed Modification.

Group's conclusions

The majority of the Group believes that the benefits of the Proposed Modification clearly outweigh the costs. See main document Section 7 and Attachment B for more details.

Alternative Modification – Benefit Analysis

Why we did it?

In order to understand the cost-benefit of the Alternative Modification.

Group's conclusions

The Group unanimously believes that the benefits of the Alternative Modification outweigh the costs, although when compared to the Proposed, some members believed the benefits of the Alternative may be more marginal. See main document Section 7 and Attachment B for more details.

The Proposed Modification would use actual Metered Volumes from SVA Half Hourly sites in the II Settlement Run. In order to do this:

- The Supplier Volume Allocation Agent (SVAA) would carry out an II Volume Allocation Run before the II Run. The data from the SVAA would then feed into the II Run.
- Half Hourly Data Collectors and Data Aggregators would be required to provide Half Hourly meter reads in time for SVAA to use them in an II VAR.
- Non Half Hourly Data Aggregators would be required to provide aggregated Estimated Annual Consumption (EAC) values to the SVAA in time for the II VAR run.

Detailed Requirements

Changes to the BSC Systems

The following changes would need to be made to the BSC Systems:

Requirement 1 – CDCA to conduct an II VAR at SD +3WD

The CDCA would conduct a VAR three working days after the Settlement Date (SD +3WD).

Requirement 2 – CDCA to provide GSP Group takes to SVAA for the II VAR (SD +4WD)

The CDCA would provide GSP group take volumes to the SVAA one working day before the SVAA II VAR (on SD +3WD).

Requirement 3 – SVAA to load the CDCA data before the relevant II VAR

The SVAA would be required to process the GSP group take volumes and include them in the SVAA II VAR.

Requirement 4 – SVAA to conduct an II VAR

The SVAA would schedule and conduct an II VAR one working day before the SAA II Settlement Run (at SD +4WD).

Requirement 5 – SVAA to use default data if data from DAs or CDCA has not been received

If the SVAA doesn't receive data from DAs and/or the CDCA, then the defaulting rules in the SVAA Service Description Section 2.7 will apply.

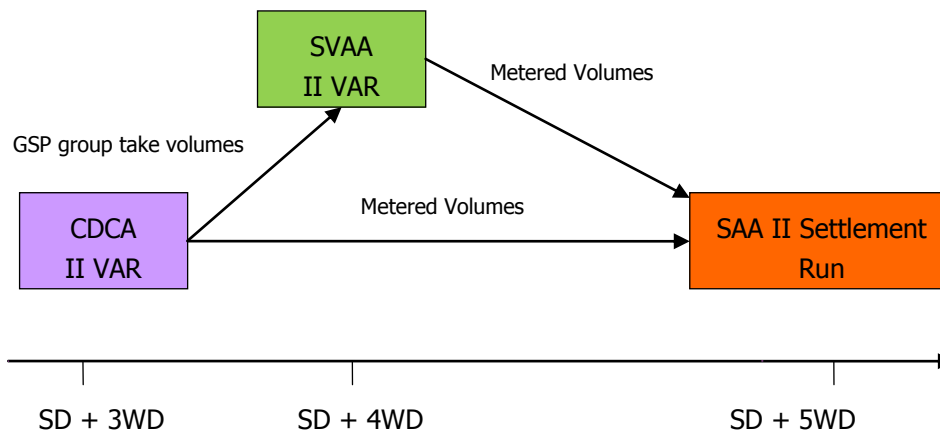
Requirement 6 – SVAA to send metered volumes to the SAA

The SVAA would send the metered volumes from the II VAR to the SAA on the same working day (SD +4WD).

Requirement 7 – SAA to receive and process SVAA and CDCA data

The SAA would receive and process metered volumes from the SVAA and CDCA, so they can be used in the SAA II Settlement run (SD +5WD)

Figure 2: Timetable for BSC Systems to complete II Run



Requirement 8 – SAA to use default data if SVAA metered volumes haven’t been received

If the SAA doesn’t receive SVAA metered volumes before the II Settlement Run then it would use the same defaulting procedures that are currently used for the SF run, as detailed in BSCP01.

Requirement 9 – CDCA to update CDCA Settlement Calendar

The CDCA would be required to produce a Settlement calendar with the CDCA VARs at SD +3WD.

Requirement 10 – SVAA to update SVAA Settlement Calendar

The SVAA would be required to produce a Settlement calendar with the SVAA II VARs at SD +4WD.

Requirement 11 – SAA to include SVAA and CDCA II VARs in the SAA Settlement Calendar

The SAA would need to include the II VARs for both the CDCA and the SVAA in the SAA Settlement calendar.

Requirement 12 – SVAA would not issue Interim Information (II) Volume Allocation Run (VAR) reports

The SVAA would not be issuing any reports (e.g. Supplier Settlement Reports, D0030 reports) to participants regarding the II VAR. Similarly, there would not be any obligations on Supplier Agents to issue reports regarding the II VAR to Suppliers.

Changes to Party and Party Agents’ processes

The proposed changes outlined below directly relate to Data Collectors (DCs) and Data Aggregators (DAs). As Suppliers would be impacted as they are responsible for their Party Agents.

Requirement 13 – Half Hourly Data Collectors (HHDCs) to provide meter readings to DAs before II VAR

HHDCs would now be required to provide Half-hourly meter reads to DAs by SD +2WD. This data would be sent via D0036 flows across the Data Transfer Network (DTN).

Requirement 14 – Where meter readings are not available, HHDCs to use estimation methods as set out in BSCP502

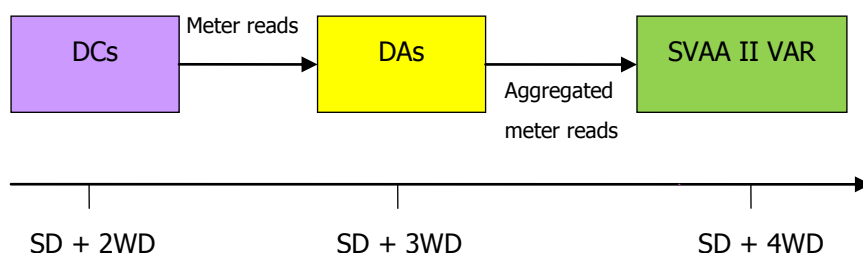
If a HHDC is unable to retrieve a genuine meter reading it would use the estimation methods detailed in BSCP502 section 4.2.1.

Requirement 15 – Data Aggregators (both Half hourly and Non-Half hourly) to provide aggregated metered volumes to the SVAA in time for the II VAR

DAs would provide aggregated meter readings to the SVAA by SD +3WD. This data would be sent via D0040, D0041 and D0298 flows across the Data Transfer Network (DTN).

Non Half-hourly Data Aggregators would not have any actual meter readings at this time and so will be required to provide aggregated Estimated Annual Consumption (EAC) values to SVAA.

Figure 3: Timetable for Data Aggregators to provide aggregated metered volumes to the SVAA



Requirement 16 – No obligations on Supplier Agents to issue reports regarding the II VAR to Suppliers

There would be no obligations on Supplier Agents to issue reports regarding the II VAR to Suppliers.

Market Domain Data (MDD) Changes

Requirement 17 – MDD Changes

Currently details of the timetable for Supplier Volume Allocation (SVA) runs are issued to SVA participants via the D0286 flow (for Non Half Hourly Data Aggregators (NHHDCs)/SVAA) and the D0269/D0270 flow (for other participants including Half hourly Data Aggregators (HHDCs)). Both flows are produced by Market Domain Data Manager (MDDM), and they do not currently include II data. For P253 the following would change:

- The Settlement data loaded into Market Domain Data (MDD) would need to include II data (which means adding 'II' to the list of valid Settlement Codes in the Settlement Type table);
- MDD would then produce D0269, D0270 and D0286 flows that contained II data;

P265 would only impact the BSC Systems (unlike the Proposed Modification which would impact also Supplier Agents). It is made up of two parts:

- Amend the way Bank Holidays are more accurately estimated; and
- Change the algebra used by the SAA II Run to estimate Metered Volumes for Supplier BM Units, in order to make it more robust to high levels of embedded generation.

Bank Holiday BSC Central Systems changes

For the II Settlement Runs, the SAA would calculate BM Unit Metered Volume for Supplier BM Units using data from previous Settlements Days (d') and Settlement Periods (j'). However, the rules for which previous Settlement Days d' are worked out would be amended as follows.

Requirement 1 - Bank Holidays shall no longer be used as the previous Settlement Day d' when estimating Supplier BM Unit Metered Volumes for the Interim Information Run

For a given Settlement Day d, Settlement Day d' shall be the most recent Settlement Day prior to d that is:

- i. The same day of the week as Settlement Day d;
- ii. Not a clock change day;
- iii. A day on which an Initial Settlement (SF) Run has taken place; and
- iv. Not a Bank Holiday.

Requirement 2 - Where the Bank Holiday is Settlement Day d, the SVAA shall use the first Sunday on which an Initial Settlement (SF) Run has taken place

Where Settlement Day d is a Bank Holiday, Settlement Period d' shall be the most recent Settlement Day prior to d that is:

- v. Not a clock change day;
- vi. A day on which an Initial Settlement (SF) Run has taken place; and
- vii. A Sunday.

Requirement 3 - The solution would be used for all England and Wales Bank Holidays

The following Settlement Days shall be considered Bank Holidays:

- New Year's Day
- Good Friday
- Easter Monday
- Early May Bank Holiday
- Spring Bank Holiday
- Summer Bank Holiday
- Christmas Day
- Boxing Day

Changing the algebra used to estimate Metered Volumes for Supplier BM Units

The second part of the Alternative Modification would change the algebra used by the SAA II Run to estimate Metered Volumes for Supplier BM Units, in order to make it more robust

to high levels of embedded generation. Full details of the revised algebra are provided below (see requirement 3), but the key ideas can be summarised as follows:

- Instead of **multiplying** the Metered Volumes from the previous period by a factor, the new algebra **adds** a share of the change in GSP Group Take to each Metered Volume.
- The amount of energy allocated to each Supplier BM Unit depends on the gross total of Import and Export for each BM Unit (not just the net Metered Volumes). This requires additional information to be sent to SAA from SVAA (see requirements 1 and 2).

This option is a more sophisticated version of one considered by the Issue 38 Standing Group.

Requirement 1 – SVAA to send Gross Volumes to SAA

Currently the SAA-I007 flow from SVAA to SAA (which is also known as the P0182) contains a single net energy value for each Supplier BM Unit and Settlement Period. SVAA will now also be required to provide the gross amount of Import and Export. The SAA-I007 flow will therefore contain two energy values for each Supplier BM Unit and Settlement Period:

- The BM Unit Allocated Demand Volume ($BMUADV_{ij}$). No change is required to this item – it will continue to be calculated and reported as currently, as the sum of Corrected Component ($CORC_{inj}$) for Import Consumption Component Classes, **minus** the sum of $CORC_{inj}$ for Export Consumption Component Classes.
- A new data item, the BM Unit Allocated Gross Volume ($BMUAGV_{ij}$), defined as the sum of $CORC_{inj}$ for Import Consumption Component Classes, **plus** the sum of $CORC_{inj}$ for Export Consumption Component Classes.

In order to minimise costs and maintain consistent file formats between Run Types, SVAA will provide $BMUAGV_{ij}$ values for Reconciliation Runs as well as Initial Settlement (SF) Runs (even though SAA has no need of Reconciliation data).

Requirement 2 – SAA to load Gross Volumes

The SAA file loader for the SAA-I007 flow will be amended to store $BMUAGV_{ij}$ for each Supplier BM Unit and Settlement Period. Note that this value is not used in Initial Settlement or Reconciliation – its only purpose is for estimating Metered Volumes in subsequent II runs.

In order to minimise costs and maintain consistency between Run Types we assume that SAA will load and store all $BMUAGV_{ij}$ data provided by SVAA (although the II estimation process only needs data for Initial Settlement, and will not actually use data for Reconciliation Runs).

In order to minimise industry impact the $BMUAGV_{ij}$ values will not be reported to Parties (i.e. no change is required to the SAA-I014).

Requirement 3 – More Robust Algebra for Calculation of Supplier BM Unit Metered Volumes in II Run

In place of the current method, SAA will calculate Metered Volumes for Supplier BM Units at II in accordance with the following equation:

$$QM_{ij} = QM_{ij'} - \Delta GSPGT * BMUAGV_{ij'} / \sum_i BMUAGV_{ij'}$$

where $\Delta GSPGT$ is the change in GSPGT between period j' and period j . The value of $\Delta GSPGT$ shall be calculated in accordance with the following sign convention:

- A positive value of $\Delta GSPGT$ indicates that the GSP Group is importing more energy (or exporting less energy) in period j than period j'

- A negative value of ΔGSPGT indicates that the GSP Group is importing less energy (or exporting more energy) in period j than period j'

To illustrate the new requirement, consider a hypothetical GSP Group that contains only 3 Supplier BM Units. The GSP Group Take in period j' was 100 MWh (of Import), and this was split between the 3 BM Units as follows:

	BM Unit 1	BM Unit 2	BM Unit 3
Total Import (i.e. sum of $\text{CORC}_{iNj'}$ for Import CCCs)	700 MWh	800 MWh	50 MWh
Total Export (i.e. sum of $\text{CORC}_{iNj'}$ for Export CCCs)	100 MWh	750 MWh	600 MWh
$\text{BMUADV}_{ij'}$ reported to SAA	600 MWh	50 MWh	-550 MWh
$\text{QM}_{ij'}$ value calculated by SAA	-600 MWh	-50 MWh	550 MWh
$\text{BMUAGV}_{ij'}$ reported to SAA	800 MWh	1550 MWh	650 MWh

In period j the GSP Group Take is 300 MWh (of Import), so the value of ΔGSPGT is $300 - 100 = +200$ MWh. The Metered Volumes for the three BM Units are therefore calculated as follows:

- For BM Unit 1, $\text{QM}_{ij} = -600 - 200 * 800 / (800+1550+650) = -653.333$ MWh
- For BM Unit 2, $\text{QM}_{ij} = -50 - 200 * 150 / (800+1550+650) = -153.333$ MWh
- For BM Unit 3, $\text{QM}_{ij} = 550 - 200 * 650 / (800+1550+650) = 506.667$ MWh

Requirement 4 – Settlement Day Implementation

The change to calculation of Metered Volumes in the II run should be implemented on a Settlement Day basis i.e. the II run for any Settlement Date on or after the Implementation Date should use the new method of calculating Metered Volumes.

Of course, the nature of the process is such that these II runs (for Settlement Dates on or after the Implementation Date) are using data produced by SVAA for Settlement Dates three weeks previously (some of which will be prior to the Implementation Date). So, in order to achieve the overall objective of a Settlement Date implementation, the system changes should be implemented as follows:

- The change to the SAA-I007 interface should be implemented on a Calendar Day basis i.e. as soon as the Implementation Date is reached, SVAA should start including BMUAGV_{ij} data in the SAA-I007 flow, and SAA should start loading it (irrespective of which Settlement Date the run relates to). Given that SVAA performs the SF run approximately 15 Working Days (or three weeks) after the Settlement Date, this means that BMUAGV_{ij} data will be available for calendar days $I-21$ and later (where I is the Implementation Date).
- The first II runs carried out by SAA following the Implementation Date will continue to use the old rules (because the change to the II Run is being implemented on a Settlement Date basis, and these runs relate to Settlement Dates prior to the Implementation Date). The first II run to use the new rules will be that for Settlement Date I , carried out 5 Working Days (1 week) after the Implementation Date (i.e. $I+7$). This II run will use SF data for a Settlement Date three weeks prior to that (i.e. $I-14$), which means the required BMUAGV_{ij} data will already be available to SAA.